CLAIMS

1. A propulsion control system for a motor vehicle having a propulsion system (1) which includes an internal combustion engine (E) with a shaft (S) that can be coupled to a transmission (2) including a gearbox (G);

the system including

a control accelerator (A) with associated electrical detector means (S1);

sensor means (S2) for supplying electrical signals indicating the speed of rotation (n) of the shaft (S) of the engine (E) and/or the speed (V) of the motor vehicle; and

electronic control means (SCU) operable to control the propulsion system (1) of the motor vehicle in a predetermined manner in dependence on signals supplied by the said detector means (S1) and the said sensor means (S2);

the system being characterised in that the accelerator (A) is associated with

a sensor (S1) operable to supply electrical signals indicating the force (F_p) applied to the accelerator (A) by the driver, and

an actuator device (6) operable to modify the position of the said accelerator (A), and in that the system control means (SCU) are operable to:

acquire the signals emitted by the said sensor (S1) and establish an instantaneous traction force (F_x), which the drive wheels (W) will develop on the ground, corresponding to the instantaneous value of the force (F_p) applied to the accelerator (A) by the driver; and

control the said actuator device (6) in such a way that it tends to place the accelerator (A) in a position corresponding, according to a predetermined function, to the instantaneous value of the speed (V) of the motor vehicle.

2. A control system according to Claim 1, in which first memory means (M1) are associated with the said control means (SCU) for storing data for defining a driveability map which correlates values of the force applied to the accelerator (A) with the travel speed (V) of the motor vehicle and with the traction force (F_x) developed on the ground.

3. A control system according to Claim 1 or Claim 2, for a motor vehicle with a servo-assisted gearbox (G) using gears, with an input shaft (I) for coupling to the shaft (S) of the engine (E) by means of a servo-controlled clutch (C); respective first and second electrically controlled actuator means (4, 5) being associated with the gearbox (G) and the clutch (C);

the system being characterised in that the said control means (SCU) are operable in a predetermined manner to determine which speed ratio to select in the gearbox (G), in accordance with criteria aimed at reducing the fuel consumption of the engine (E).

4. A control system according to Claim 3 including second memory means (M2), associated with the control means (SCU) and storing data for defining the speed ratio or gear to be used in the gearbox (G) in dependence on the traction force (F_x) that the drive wheels (W) develop on the ground and on the speed (V) of the vehicle, and in which the said control means (SCU) are operable to determine the gear to be used on the basis of data stored in the said second memory means (M2).

5. A control system according to Claim 4, in which the said second memory means (M2) contain data which, in the ground traction force/ vehicle speed plane (F_x/V), represent

thresholds for gear change; the change from one gear to that immediately above (or below) having a different threshold from that for a change the other way.

6. A control system according to Claim 2, in which the said driveability map is such that, for values of vehicle speed (V) lower than a pre-established threshold, non-negative values of traction force (F_x) on the ground correspond to values of the force applied to the accelerator (A).

7. A control system according to Claim 6 in which the said control means (SCU) are operable to cause the clutch (C) to disengage when the accelerator (A) is released while the vehicle speed (V) is less than the said predetermined value and the driver is not changing gear; the said clutch (C) being re-engaged as soon as the accelerator (A) is acted on again.

8. A control system according to Claim 7, for a motor vehicle in which a reversible electric machine (M), operable to act as electricity generator and as electric motor, is coupled to the internal combustion engine (E) and in which an electronic control unit (3) is associated with the internal combustion engine (E);

the system being characterized in that the said control means (SCU) are operable to

cause the internal combustion engine (E) to be switched off, by means of the said electronic control unit (3), each time the accelerator (A) is released and the clutch (C) is disengaged, except when the clutch (C) has been disengaged in order to change gear; and

cause the internal combustion engine (E) to be started again by means of the electric machine (M) operating as a motor, as soon as the accelerator (A) is operated once again.